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Lessons to be Learned from History and the Perspective of Grandparents and Vaccination of Children

ABSTRACT

The progress of medicine over previous decades includes benefits in the world of vaccination against especially childhood disease. It is therefore surprising to witness the growing and vociferous opposition to childhood vaccination, especially for measles. This poses substantial personal and public health risks. It is important to understand the reasons that anti-vaccination sentiment has taken hold among many often highly educated parents.

KEYWORDS: Vaccination, anti-vaxxers, polio, measles vaccine

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I is always useful to recall our collective historical legacy if we are not to repeat errors that should have been internalized decade after decade and century after century. When raising children, one of the dictums of responsible parenting and a stark contrast to the common practice of "helicopter parental hovering" is to allow children to make mistakes and then learn from them for their rest of their lives. When I was a senior medical resident I recall one of my interns expressing the thought that he should leave medicine because he had made an error in the use of a certain drug which almost led to the death of a patient—which by good fortune did not happen. I recall saying to him either in my wisdom or naivety and great regard and affection for him, "making mistakes is part of medicine—but if you make the same mistake twice then we have a problem."



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There is a turbulent war of words and in essence belief systems at play now across primarily North America as the rate of vaccination against common and utterly preventable childhood infectious disease declines and in

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> parallel outbreaks of these diseases is on the rise. The usual response from the responsible medical community is to try and convince the anti-vaxxers as they are called with medical "facts" and as we often resort to "evidence-based medicine" the hallmark of modern medical knowledge and a major guide to medical interventions whether by medication or surgery. It is an ever evolving practice which means for the public, it is often hard to fathom how one year a treatment is lauded and a year later it falls into disrepute—which makes for an ever-increasing skepticism for those who do not fully understand the process of evolving medical knowledge.

The recent outbreak of measles in California, which spread to other American States, and the simultaneous finding of cases in

Toronto is a stark reminder of the inherent risk to our children of the ill-informed anti-vaccine movement. Canada last year witnessed an enormous outbreak of measles with hundreds of cases primarily but not exclusively in Western Canada with the majority occurring in non-immunized children. The current outbreak in the United States is also amongst primary unimmunized or underimmunized young children (those who did not complete the recommended course of immunizations which is a two-step process). The regimen according to the American Center for Disease Control (CDC) is a follows: "To prevent measles, children (and some adults) should be vaccinated with the measles, mumps, and rubella (MMR) vaccine. Two doses of this vaccine are needed for complete protection. Children should be given the first dose of MMR vaccine at 12 to 15 months of age. The second dose can be given 4 weeks later, but is usually given before the start of kindergarten at 4 to 6 years of age." Some adults may need a booster as well as immunity may eventually wane.

While witnessing the unfolding of this contemporary saga of the public's skepticism to the point of actually potentially endangering their children, probably the most loved creatures in their lives, I was reminded of the historical legacy that brought vaccination into the parlance of the medical profession. I recently read the biography of Catherine the Great: A Portrait of a Woman by the highly acclaimed historian Robert K. Massie. This followed another rendition of

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> the same Russian epic in a more novel-like book, The Winter Palace: A Novel of Catherine the Great by Eva Stachniak.

> Of special interest is the role that Catherine played in promoting the idea of inoculation against smallpox, a disease that periodically ravaged much of Europe and especially Russia.¹ Catherine, a keen observer of science wondered if it was worth trying the method of immunizing her populace against smallpox by using the method long in vogue of inoculating into the opened vein of a healthy person some of the pus from a smallpox pustule from a person ill with a mild form of the disease. Despite the risk of the disease developing into a full blown case of smallpox, many people had already benefitted from this technique. To that end Catherine

brought to Russia in October 1768, an English physician Dr. Thomas Dimsdale who inoculated the empress against smallpox. The next day, moving into the Tsar's palace with her retinue, Catherine indulged in her usual pursuits: ladies, gentlemen and ladies in waiting accompanied her on walks. After a period of 16 days she was declared inoculated successfully after which she tried to implement such a program throughout Russia with only modest success.

It was almost 30 years later in 1796 that the famous physician. Edward Jenner conducted an experiment on one of his patients, James Phipps, an eight year old boy. He proceeded with inoculating the young boy with the pus from the cow pox that young socalled milk-maids contracted from milking cows. After extensive observation and then an attempt to transfer true smallpox to the boy that failed to take hold, Jenner's treatment of vaccination named after the medical name for cox pox, vaccinia was established. It changed the scourge of smallpox although it took centuries before the plague of this disease was eliminated from the world.²

One might wonder how educated modern parents who have had ample opportunity to read about and understand the history of vaccinations for a wide range of potentially lethal or very serious illnesses might forget all that they knew and take on an almost religious fervor against routine inoculation of their children. The history of the anti-vaccination movement is interesting in its own right as it

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> reflects a degree of medical dishonesty by an otherwise respected medical researcher who lied about his research findings to erroneously connect measles vaccination to an increased risk of autism-a terrible disease of children. Once the word got out and despite multiple studies demonstrating the findings as erroneous and even after the admission by the study's author, Dr. Andrew Wakefield that he, misrepresented or altered the medical histories of all 12 of the patients whose cases formed the basis of the 1998 study, the anti-vaxxers have held sway over many parents who refuse to vaccinate their children.³

In addition to using the best of evidence and invoking the best of public policy processes what more can be done to help resistant parents understand the risks to their children of not vaccinating them and the virtually non-existent risk of promoting autism. To that end grandparents can be an important source of historical perspective on the compelling need for vaccination: it is often only they who have a living memory of what life was like and what the effects of childhood infectious disease was prior to the introduction of vaccination programs. I am a physician and a grandparent who recalls vividly the period prior to the advent for example of the polio vaccine. Polio for most North Americans is a distant memory and parents who reject their children getting such a vaccine as well as other commonly used and recommended vaccines have no historical personal perspective on the results of childhood infectious diseases.

As a young adolescent I recall the polio outbreak that affected America in the early 1950s. In 1952, there were 59,000 cases of paralytic polio in the United State: serious outbreaks occurred in all of the forty-eight states, and in the territories of Alaska, Hawaii, and Puerto Rico. A similar picture existed in Canada where the disease peaked in 1953 with nearly 9,000 cases and 500 deaths.

I recall what it was like during those few years where the parents worried about their children contracting the dreaded disease. There were newsreels in the movies showing vast wards with primarily children in *Iron-Lung machines*, the only way to keep a child alive with

SUMMARY OF KEY POINTS

The public are not always convinced by the best of medical evidence

The history of vaccination is long with many great heroes some of whom were not medical or scientific professionals Medicine is always evolving—the public does not always understand the process

Grandparents with their historical perspective of childhood diseases can be a source of wisdom to support universal vaccination

severe paralysis until with luck there was some natural recovery from the disease. I still see elderly patients who were afflicted with Polio who survived but were left with life-long paralysis and often develop what is called the *postpolio syndrome* in later years that interferes seriously with normal function and may compromise life expectancy.

Iron-lung machines



Our parents forbade us from swimming in public swimming pools which for me living in Brighton Beach in Brooklyn was a serious prohibition. Most of the children wore a slab of camphor tied to a string around their necks to "ward off the disease" which of course there was no evidence that this step worked. Then in 1955 with the discovery the Salk vaccine and massive population immunization, this scourge of childhood disease ended and should be virtually a thing of history but for those who reject such childhood vaccination for misguided reasons.⁴

Grandparents are the only ones who can talk with authority and experience about the real face of childhood infectious outbreaks; it is incumbent upon our generation of seniors to use our influence and hopefully intrinsic respect to convince the vaccine naysayers of their misguided and potentially lifethreatening anti-vaccine position and errant understanding of the



Trying to convince people who believe vaccination causes childhood diseases may not respond to more and more evidence as their belief is almost religious in nature

Sometimes it is the perspective of those old enough to remember the scourge of childhood infectious illnesses who can play a role in helping their children who may oppose vaccination come to their parental senses

science in contrast to their dangerous beliefs.

On a positive note, the California State legislature has recently passed a bill prohibiting parents from having their children exempt from vaccination on the basis of personal beliefs. There was some fierce and vociferous opposition from some members of the public but the legislature did the correct and courageous thing by taking a major step in ensuring the public health and safety of the children of that state.⁵

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